DSN Discrepancy Reporting Subsystem

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The Deep Space Network discrepancy reporting subsystem and the results of the first year's discrepancy reporting operation using a computerized data management system are briefly described. The general problems encountered and the steps being taken to solve them are discussed.

The discrepancy reporting subsystem (DRS), as a part of the DSN Operations Control System, is responsible for collecting and cataloging all documented reports of operational discrepancies. These include hardware and software failures, as well as procedural problems that occur during any scheduled operation. The cataloged information must contain a description of the discrepancy, including (1) the facility(s), system(s), and equipment(s) involved, (2) the corrective action taken, (3) the personnel involved, and (4) the time of occurrences. This information should be cataloged in such a way as to facilitate rapid retrieval based on varied selection criteria.

Approximately one year ago, the DRS data files were placed in a computerized data management system using a prototype program. This system has since proved its worth many times over. It allows for the rapid retrieval of data in endless formats, using practically any available data parameter or parameters as selection criteria, and can be accomplished with a minimum of programming effort.

Although this new capability represented a major improvement in the DRS, several old, as well as some new deficiencies, were present. There are several new parameters very necessary for report sorting that were not included in the computerized data base, and a definite ability to correlate discrepancy reports (DRs) with the network schedule is required. In addition, the forms used for reporting a discrepancy are not fully compatible with the computerized data base and are time-consuming.

Efforts are now underway to correct these known deficiencies and to make several other needed improvements. The data base is being expanded to include the needed missing data parameters. It is also being restructured in a manner that will facilitate the use of the DSN scheduling data base as a reference file during computer runs. Also, the reporting forms are undergoing a major revision. Working with the various facilities, the DR forms are being reviewed and redesigned in an effort to make them more comprehensive and easier to complete.

The method of reviewing corrective action taken, and closing out DRs, is also being investigated, and several methods of involving the facility and system engineers in this process are being considered.

These improvements should all be completed and placed in operation prior to the *Mariner* Mars 1971 launch in May 1971.